User Manual

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Cosc 4P02
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Contents

Preface

For the complete final report for our Cosc 4P02 project, please refer to the *.pdf* file named *Cosc-4p02-Final-Report.pdf*. The following document is designed to represent a section of the overall final report.

1 Introduction

The purpose of the following document is to provide users with a comprehensive guide to using our logistics system, *ReRoute*. We cover all main aspects of the system, namely user accounts, credits and billing, routing, saving and loading routes, and fleet management (contacts). For using a specific component of the system, please refer to that section, listed above in the table of contents. For first-time use of the system, the content in this document is presented in a manner that follows the natural progression of the user experience. Screen captures within this document may pertain to more than one section, as ample information may be presented within a given capture.

2 Installation and Landing Page

This system is accessible for use at *https://www.re-route.ca/*. Users will be greeted by the landing page. After reading the about information, users can then follow the *get started* button to then use the system.

2.1 System Navigation

Refer to figure 3, that depicts the user dashboard of the system. Upon successful login to the system, one is greeted by this dashboard, displaying the credits associated with their account, the interactive routing map, account email and a menu on the lefthand side. One can navigate to the following subsystems as follows;

- Routing: This is done on the displayed dashboard, or can be found by following the *Routes* link in the lefthand menu (in light blue). For routing information, see 5;
- Loading Routes: Finding the saved route to reload back into the dashboard can be done by following the *Load* link in the left hand menu (in orange). Information on loading routes is in 6;
- Fleet: Managing contacts can be found by following the *Vehicles* link (in green). Information on the fleet can be found in section 7;
- Billing and Adding Credits: For the addition of credits to an account, please follow the *Billing* link (in red). Information on billing can be read in section 4.

3 User Accounts

To use the *ReRoute* system, one must have a session open as a valid user. For account creation as a new user, see 3.1. For users who have already followed the account creation process, please proceed to 3.2 for information on staring a session.

3.1 Account Creation

The following will taskify the account creation process. There are two ways to open a user account, namely, typical email and login credentials or linking a valid *Google* account.

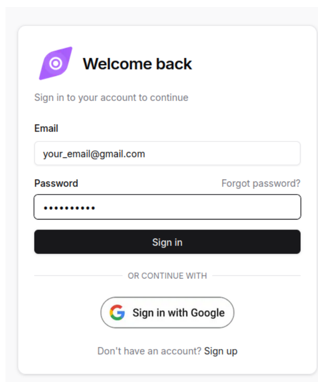

Figure 1: Login Page

- The above displays the login page, but for account creation, please follow the *Sign up* link below the *Sign in with Google* button;
- Users will then see the following page;
- Users must fill in **all** fields before clicking create account.
- Upon successful account creation, one will be redirected to the login page in figure 1.

3.2 Login

The login page is the one presented in figure 1. Users have two main ways of logging in, being providing the proper login credentials, or *Google*. In the case of not using a *Google* account, enter newly or previously created login credentials to access the account. Otherwise, users will be prompted to follow steps from using their *Google* accounts. Upon a successful login users will begin

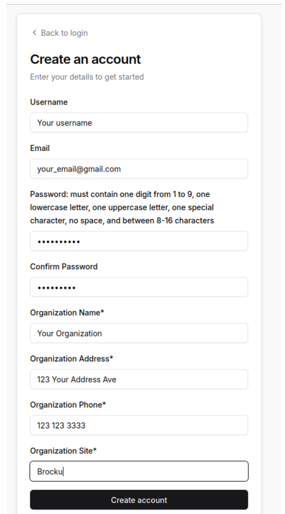

Figure 2: Sign Up Page

their session on the main page or *dashboard* and are then ready to add credits and begin use of the system.

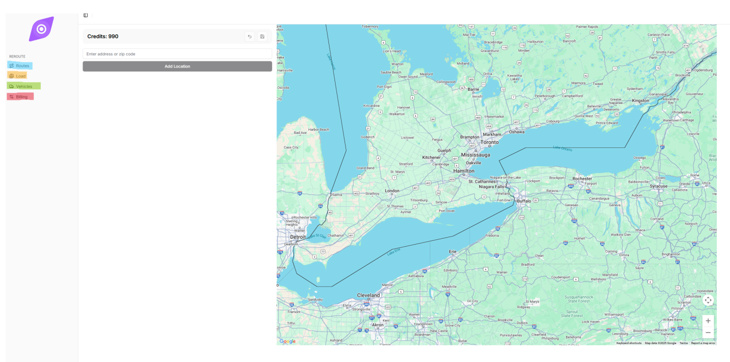

Figure 3: User Dashboard

3.3 Ending Session

Ending user sessions can be done simply by navigating to the bottom of the leftside menu, regardless of the page that the user is currently on. The user must select their *Username or Email* and then follow the *Logout* button. Users will then be returned to the landing page found by following this link.

4 Credits

The addition of credits to ones account is necessary to access the routing, (see section 5) capabilities of the system. A breakdown of credits are provided to the user on the *Credits and Billing* page. To add credits to an account, navigate to the *billing* tab in figure 3, then to *Stripe Payments* drop-down. Here users can select the number of credits desired to add to their accounts, and then click the *pay* button that appears to proceed in the transaction.

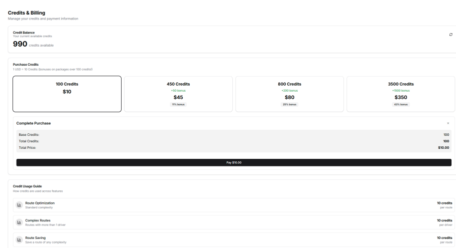

Figure 4: Billing and Payments

4.1 Billing

The billing process involved with the addition of credits is simple, although it must be followed properly for credits to be added properly. Upon selecting the *pay* link, users will be directed to the *Stripe Payments* page to enter payment details. As with all payments, please enter details properly.

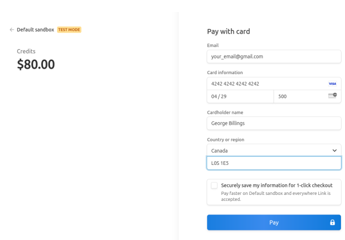

Figure 5: Payment Fields

5 Routing

The routing capabilities offer the functionality of the system. As stated in section 4, one must add credits to their account before routing vehicles. Users on the dashboard with credits in their account will see a page similar to figure 3 or to that of figure 6 (up to the credit fields and account). The following subsections outline the formation of routes and then applying changes to the routes. Accessing the dashboard can be done by either beginning the session, or by clicking the route drop down on the lefthand side of the UI shown in figure 6 and then selecting *Create Route*.

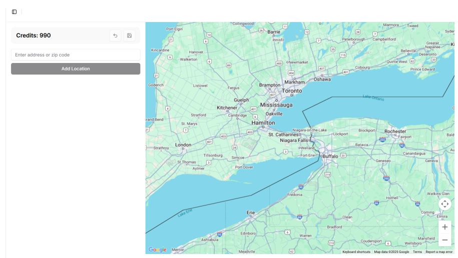

Figure 6: Dashboard with credits

5.1 Adding Locations

Begin by adding locations to the map to find a route between. Adding locations can be done by searching for them in the *Enter Address or ZIP code* field, whcih can be auto-completed by Google. Add locations to the list until all destinations within a route have been satisfied. Before optimizing route, make note of the first location in the list, as this one will be considered the starting location of the route. To reconfigure the starting location, one can *drag and drop* the starting location to the top of the list of locations. This location will then be considered the starting location. Below, in figure 7, we see that the starting location is in Barrie, ON.

After Inputting the proper locations into a route, one can then click the *Optimize Route* option to get the results. The *Clear All* button resets the route and map, allowing for a fresh start.

5.2 Editing Routes

Editing routes refers to either altering a computed route, or configuring the route options before computing a route. In figure 7, note the *Route Options* button. Clicking this opens the menu presented in figure 8, allowing the user to configure options about the final path that may depend on their actual vehicle being routed. By default, all of the these fields are set to *false*, and are reset back when ending a session.

When altering previously computed routes, the following aspects can be changed, allowing for a new route to be displayed, without needing to re-input all locations;

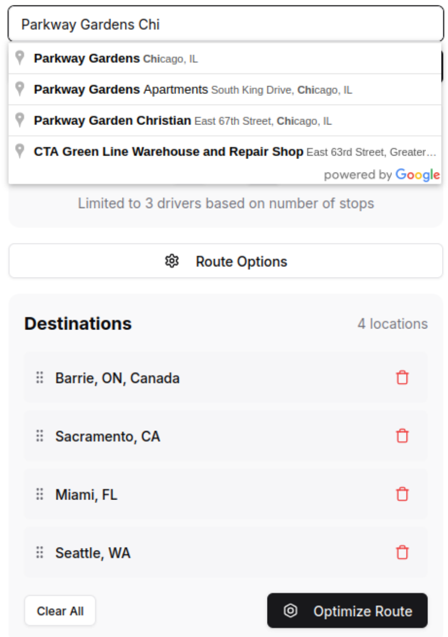

Figure 7: Auto Complete and Destination List

- **Adding locations**. This will clear the route on screen, and essentially restarts the location input aspect of the system. All users need to do is input one or more locations in the *Enter Location or ZIP Code* field.
- **Deleting Locations**. This will clear the route on screen too, and restarts the location input aspect of the system. Users can remove a location from the route by clicking the red *Garbage Can* found in figure 7.
- **Starting Location**. This can be altered in the same manner described in section 5.1 and also clears the visualization of the current route. After computing a route, using the same locations, users should drag their new desired starting location to the top of the list.
- **Route Options**. After finding a route based on the desired route options, this can then be recomputed with the same locations, but be tuned to any combination of the options shown in figure 8.

5.3 Adding Drivers

Single vehicle routing refers to all routes with only one driver. For logistics purposes, one can adjust the routes to be serviced by up to *10* drivers. The number of drivers can be adjusted simply by clicking the plus or minus button shown in figure, 10. Also, depending on the number of locations (aside from

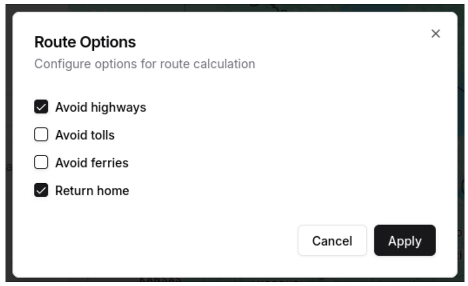

Figure 8: Route Options

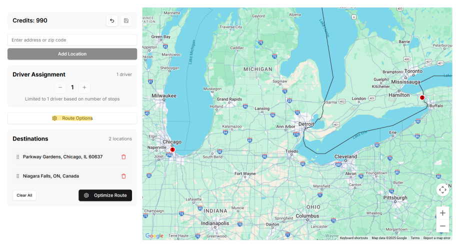

Figure 9: Accessing Route Options

the starting location) the number of drivers allowed will never be more than the number of desired stops in the users route. This functionality is also shown in figure 10, where within the number of drivers field, we see limited drivers message communicating this information. This is designed to limit redundant and inconsistent user inputs. Further note that adjusting the number of drivers only is allowed after entering valid locations.

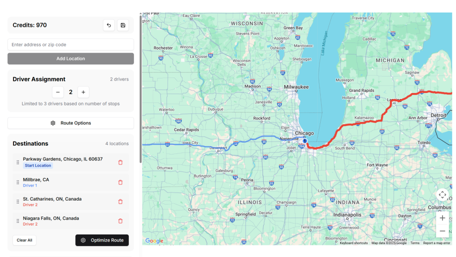

Figure 10: Adding/Removing Drivers

5.3.1 Viewing Drivers

When routing multiple drivers, it is often desirable to view the directions and information pertaining to one vehicle. This can be accessed by simply selecting the desired driver, as they appear below the information regarding stops and route options as seen in 11. This will then isolate that specific drivers directions in the directions field, as well as produce that drivers exportable link, allowing the user to view the route in *Google Maps*.

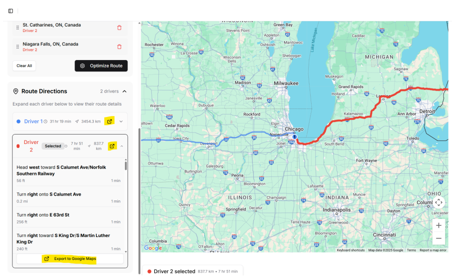

Figure 11: Viewing Drivers

5.4 Exporting Routes

The exporting routes capabilities of the application is limited to viewing the route in *Google Maps*. This allows users to;

- View real-time traffic as this is a feature of *Google Maps*.
- Change the mode of transportation, as once one is viewing the route within the mapping software, one can view the time to walk the route or bike.
- Share the link with others, being friends, coworkers or employees (see section 7).

To properly export a route, one must first select the desired driver/route that they would like to export 11. Then the user should click the *Export Routes for Driver* button as seen in figure 10, which will present the user with the proper link or open the route in Google. Following that link offers the exporting route capabilities.

6 Saving and Loading Routes

Saving and loading routes refers to the ability to compute a route (based on listed locations and route configuration) and then store this information to be processed or adjusted later. Each user can store up to *6* route within their account. Users should note that the rendering of the route is done at the time of loading the route and that the locations will be in the same order, but the actual path took may vary depending on the time the route is being loaded. We now outline saving and loading.

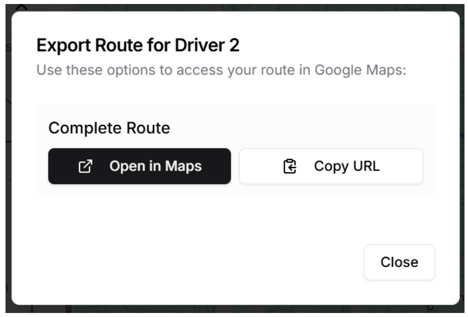

Figure 12: Exporting Options

6.1 Saving

Once a route has been computed, click the save route button (that resembles saving a file), on the right of the user credits on the dashboard, shown in figure 13. This will then prompt a user to save the route with a name and it will then be added to their saved routes. Saved routes can be accessed be clicking the routes drop-down on the left hand side of the UI shown in figure 6 and then following *Saved Routes*.

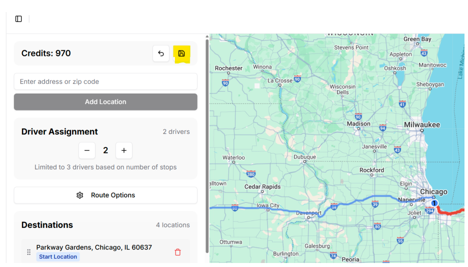

Figure 13: Saving Routes Icon

6.2 Loading

To load routes, one first computes and then saves routes. Saved routes can be accessed by clicking the routes dropdown on the lefthand side of the UI shown in figure 6 and then following *Load*. On this page, users can see their saved routes, and then load them by clicking on the *Load Route* button for a specific route. This functionality is within figure 14. Upon *Loading Route*, this will then return the user to the *Dashboard* with the route loaded in, ready to readjust or view the route again.

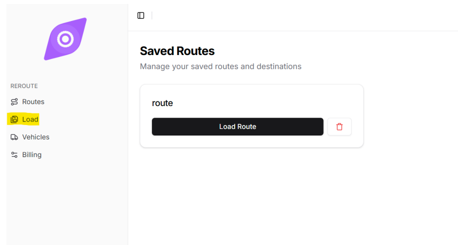

Figure 14: Saved Routes Page

7 Fleet

The fleet page is meant to be a contacts system, facilitating easier route exportation to others. The fleet page can be accessed on the user dashboard, on the lefthand side of the UI shown in figure 6 and then following *Vehicles*. The fleet page then displays all contacts inputted in the system, along with their email and specific car. One can add drivers by following the *Add Drivers* button depicted in figure 15. The user will then be presented with a form shown in 16. Users must add all fields for a driver to be added into their contacts. To delete a contact, simply follow the *Delete* button associated with a driver and they will be removed from the list. A maximum of *20* contacts can be stored per user account.

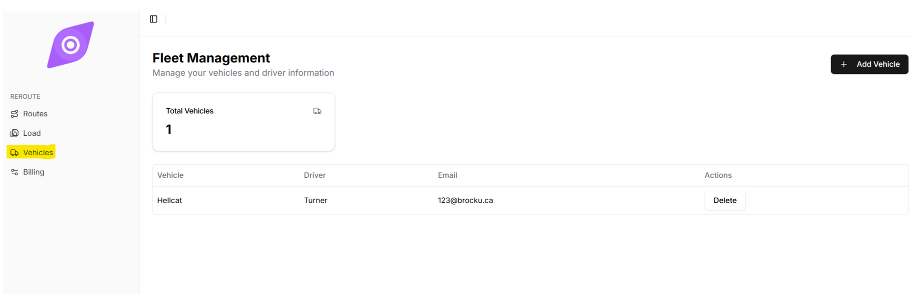

Figure 15: Fleet/Contacts Page

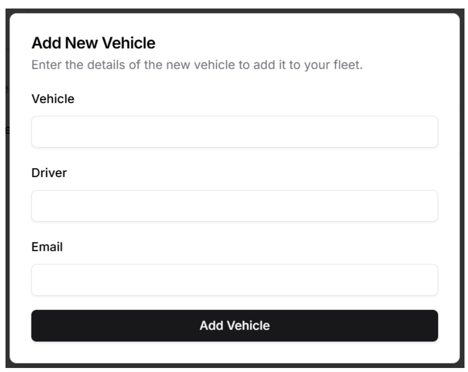

Figure 16: Adding Contact